



Aalborg Universitet

AALBORG UNIVERSITY
DENMARK

Fit-For-Purpose Land Administration Strategy

An Innovative Approach to Implement Land Policies in Nepal

Janak, Joshi Rai ; Pandey, Uma Shankar; Chhatkuli, Raja Ram; Enemark, Stig; Antonio, Danilo; Deuja, Jagat; Sylla, Omar

Published in:
Catalyzing Innovation

Publication date:
2019

[Link to publication from Aalborg University](#)

Citation for published version (APA):

Janak, J. R., Pandey, U. S., Chhatkuli, R. R., Enemark, S., Antonio, D., Deuja, J., & Sylla, O. (2019). Fit-For-Purpose Land Administration Strategy: An Innovative Approach to Implement Land Policies in Nepal. In *Catalyzing Innovation: Annual World Bank Conference on Land and Poverty, Washington DC, March 25-29, 2019*

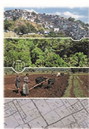
General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal -

Take down policy

If you believe that this document breaches copyright please contact us at vbn@aub.aau.dk providing details, and we will remove access to the work immediately and investigate your claim.



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



FIT-FOR-PURPOSE LAND ADMINISTRATION STRATEGY: AN INNOVATIVE APPROACH TO IMPLEMENT LAND POLICIES IN NEPAL

**JANAK RAJ JOSHI¹, UMA SHANKAR PANDAY², RAJA RAM CHHATKULI³, STIG
ENEMARK⁴, DANILO ANTONIO⁵, JAGAT DEUJA⁶, OUMAR SYLLA⁷**

¹Ministry of Land Management, Cooperatives and Poverty Alleviation, Nepal

²Department of Civil & Geomatics Engineering, Kathmandu University, Nepal

³UN-Habitat, Nepal

⁴ Aalborg University, Denmark

⁵Land and GLTN Unit, - UN-Habitat, Kenya

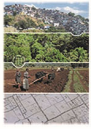
⁶Community Self Reliance Center, Nepal

⁷Land and GLTN Unit, UN-Habitat, Kenya

janakraj.joshi@nepal.gov.np

**Paper prepared for presentation at the
“2019 WORLD BANK CONFERENCE ON LAND AND POVERTY”
The World Bank - Washington DC, March 25-29, 2019**

Copyright 2019 by author(s). All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



Abstract

The current Nepalese Land Administration System only deals with the formal land tenure system. Approximately 10 million land parcels are under informal tenure and outside the formal cadaster. Families under such informal tenure are highly vulnerable to eviction due to unsecured land tenure. Informal tenure is causing huge loss to economy and the valuable land asset is dumped as “dead capital”.

Addressing this problem of informality with the existing conventional approach may require huge financial resources and a long timeframe, which could be difficult to manage for a country like Nepal with limited resources and escalated demands of the people generally after the peace process of 2007. In this context, this paper presents an innovative approach using a Fit- for-Purpose (FFP) approach to land administration, which is seen as an appropriate solution to manage informal land tenure and, thereby, implement the provisions in the proposed land policies, and newly enacted Constitution of Nepal. The results of the pilot studies are encouraging and it is considered that the approach can be implemented throughout the country at affordable costs and within a relative short timeframe.

Key Words: Fit-For-Purpose, Land Administration System, Land Tenure, Informality



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



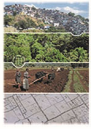
1. Introduction and Problem Outline

Land Tenure is the mode by which the land is hold in the society. It explains how the land is hold, by whom, for how long and under what conditions and circumstances. It defines the relationship between land and the (legal) person who holds the land. Nepal has a history of different land tenure systems (Regmi, 1977). After the introduction of land reform program in 1964, several tenure systems based on feudal grants by the state and customary practices were de-legalized. At present mainly two systems of land tenure do exist- statutory and non-statutory (Figure 1). The statutory system is one, which deals with the registration of legally recognized land tenure. The land parcels are measured, mapped and recorded officially together with land tenure information in the national land registry, or the cadaster. Under this system, mainly three types of land ownership are recognized: Raikar (the private land), State (the land belongs to Government or the public property) and Guthi (the trust land). The other system by which the land is hold is a non-statutory system, which further can be classified in three types: Non-formal, informal and encroachment.

Land Tenure System			
Registered/Statutory		Unregistered/Non-	
Land Tenure Type	Raikar	Private	Non-formal
	State	Government	In-formal
	Guthi	Several types	Encroachment
			Socially accepted Legally recognized Unregistered
			Socially accepted Legally not recognized Unregistered
			Socially not accepted Legally not recognized Unregistered

Figure 1. Land Tenure System in Nepal (Source: (Joshi et al., 2017))

The land on which rights of the settlers are socially and legally recognized but not registered is known as Non-formal. The right is socially unchallenged and established. The land can be registered under the existing legal framework. The land on which rights of the settlers are neither legally recognized nor registered in the official cadaster is termed as In-formal. However, the settlers have been occupying the land since quite a long time. Their possessions are normally accepted and not challenged by the society. The land cannot be registered under the existing legal framework. Illegal holding of settlers over private or



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



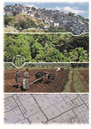
public land is called Illegal possession or encroachment. The land originally belongs to some other private or legal person, institution, Government or public/community, which is being captured and settled by other groups of people. Such tenures are neither legally nor socially recognized.

Current Nepalese land administration system (LAS) only deals with the formal or statutory land tenure system. This includes only registered land in national cadaster. In Nepal, almost 28% of the total land area is arable, of which around 75% is formally registered, and their tenure is secured. The LAS does not deal with non-statutory or informal land tenure. Around 25% of the total arable land and settlements outside the formal cadaster, which is estimated to be approximately 10 million physical parcels on the ground. Thereby, a significant part of the Nepalese population is living in informality with unsecured land tenure and without formal spatial recognition.

According to Agriculture census (2001) conducted by Central Bureau of Statistics (IRIN, 2010; United Nations Nepal Information Platform, 2017), about 1.3 million families (out of 5.3 mill in total in Nepal) have informal tenure on land. Twenty-six percent of the Nepalese population, mostly members of the *Dalit* and other Terai communities are landless and generally occupy a piece of informal holding for shelter. It means these families are highly vulnerable to eviction due to unsecured land tenure. Furthermore, these families may live in poverty and less dignified livelihood condition because of the lack of security of land tenure. People cannot mortgage the land for starting up any business, entrepreneurship and income generating activities for improving their economic condition. The land cannot be bought and sold on the formal land market, which means the government cannot impose any kind of property tax or levy registration fees on the land transactions. Because of unsecured tenure, the settlers hesitate to invest on the land and improve its productivity. All these consequences show that the land under informal tenure is causing huge loss to economy and the valuable land asset is dumped as the “dead capital”.

Unrecognized land tenure may further restrict the settlers for getting any compensation and government grants and benefits in case of any disasters such as earthquake and floods as was witnessed in the post 2015 earthquake reconstruction and recovery. This kind of situation leads to further landlessness, encroachment of public and private land and escalated poverty.

The Constitutional Assembly of Nepal had promulgated the Constitution of Nepal in 2015, which has well identified and outlined such problems and proposed various provisions on access to land under fundamental rights. These provisions are widely appreciated by the experts and considered milestones to resolve the long existing problems in Nepal. Further, a comprehensive Land Policy has been drafted after wider



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



consultations with different stakeholders, which is basically based on the foundations of the newly enacted Constitution of Nepal.

The current land administration system (LAS) designed after 1964 has been established over more than five decades and billions of rupees and huge human resources have been spent in this process and, still, the system is short of more than 25% coverage. Addressing the above-mentioned issues under current LAS will again need additional massive amount of money, long timeframe and huge human resources.

In this context, the Nepalese land administration system requires a new innovative solution to be able to deliver security of tenure for all. The solution must be affordable and flexible. It must be quickly applicable and can then be incrementally improved over time. The Fit-for-Purpose (FFP) approach to land administration has emerged to meet these practical, but challenging requirements. Thus, it was decided to develop a FFP land administration strategy for implementing the progressive provisions as outlined in the new Constitution of Nepal and the proposed land policies in compliance with international instruments and best practices.

2. Brief Review of Current LAS and Its Limitations

Nepalese LAS is still managed manually in significant extent. Application of digital technology is in preliminary stage. The modern cadaster, which was originally established for fiscal and legal purpose, is graphical in nature. It was initiated sporadically almost 90 years ago, and comprehensive nation-wide survey was carried out after the introduction of land reform program almost 55 years ago. Currently, almost 75% of arable land and settlements in the country is covered by national cadaster. The rest are still outside the formal cadaster. Additionally, another land area such as forest, national parks, several barren lands, meadow, mountains, snow-covered area etc. are also outside the existing LAS. The cadaster consists of series of geo-referenced maps (covering half of the mapped area of the country) based on national coordinate system and island or non-georeferenced maps (covering another half of the mapped area of the country), and registers with descriptive record of parcel, their owners' and rights over the land parcels.

The major drawbacks of current LAS can be briefly outlined as:

- The cadaster comprises the record of cultivated land and settlement. It does not have information on other land such as forest, mountain, riverine, shrubs, wetlands, meadow, and barren lands.
- The land administration system controls the formally registered land only. It does not consist the information on land with informal tenure.



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



- The cadaster and land administration system focuses mainly on information, which are necessary for fiscal and legal purposes. It lacks information that supports other social aspects such as poverty, equity, inclusiveness, marginalization, vulnerability etc.
- Land information acquisition, processing and recording system is traditional and manual. It is less accurate, labor intensive, time consuming and inefficient.
- It is much more process oriented and lacks proper transparency. People face difficulty in receiving effective and reliable land related services on time and, hence, good land governance is a major issue.
- The attribute data currently stored in various systems are based on the existing land ownership certificate. The certificate contains limited personal information on the landowners.
- The information contained in the land ownership certificate is not up to date to define the complete legal situation of a land parcel and the complete socio-economic status of the owners.

The current LAS is the result of a very dedicated effort of last five decades with the investment of huge financial and human resources. Still 25% of the arable land is out of formal cadaster. It means that if we proceed in the similar way, it will again take several decades and other billions of rupees and huge number of highly skilled technical people to complete the registration. On the other hand, the demand and aspiration of people and society for getting better services is increasing. This creates a huge pressure on Governments agencies and service providers. In this context, there is an urgent need to acquire the information of all remaining land within the national cadaster within a short time frame and in an effective, efficient and affordable way. Based on the previous experience, this does not seem possible by using the conventional surveying and mapping approach. Therefore, an innovative approach is needed to fulfill this need, which can perform this task in a cheap and fast way and with a level of accuracy that is good enough for the purpose.

3. Fit-For-Purpose Land Administration System: A Potential Solution

The Nepalese land administration system requires a new solution to be able to deliver security of tenure for all. The solution must be affordable and flexible. It must be quickly applicable and can then be incrementally improved over time. The Fit-for-Purpose (FFP) approach (Enemark et al, 2016) has emerged to meet these simple, but challenging requirements as the main objective of this approach is to design and implement fast, cheap and good enough land administration system.

The FFP land administration approach is characterized with three key components: Spatial, Legal and Institutional frameworks. Spatial framework is related with mapping and recordation of the land parcels.



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



FFP land administration systems use low-cost alternative compared to conventional surveying techniques for data acquisition and cadastral mapping for delineation of visible or physical boundaries on the ground. It is fundamentally a participatory approach with the involvement of all stakeholders and can be carried out by locally trained land officers. The accuracy standards are flexible and can vary according to typography, building density, land values and the diversity of tenure types to be protected. It may then be upgraded and incrementally improved over time when required.

The legal framework is related to adjudication and recording of the rights connected to the land parcels. Whereas conventional cadastral system is based on legal lines, FFP is a flexible framework designed along administrative outlines. A continuum of tenure approach is supported by FFP rather than just individual ownership, as is the case of conventional land administration system. Moreover, FFP supports a more flexible recordation of physical cadastral boundaries ensuring gender equity for land and property rights.

The institutional framework is related with the mechanism of service delivery through certain institutional setup. The FFP approach is focused on good land governance with integrated institutional framework. Further, FFP uses a flexible Information Communication Technology (ICT) approach for cadastral mapping, recordation and provision of land administration services. Additionally, the FFP approach provides transparent land information with easy and affordable access for all. The FFP approach can be explained with the help of the diagram given below in **Error! Reference source not found..**

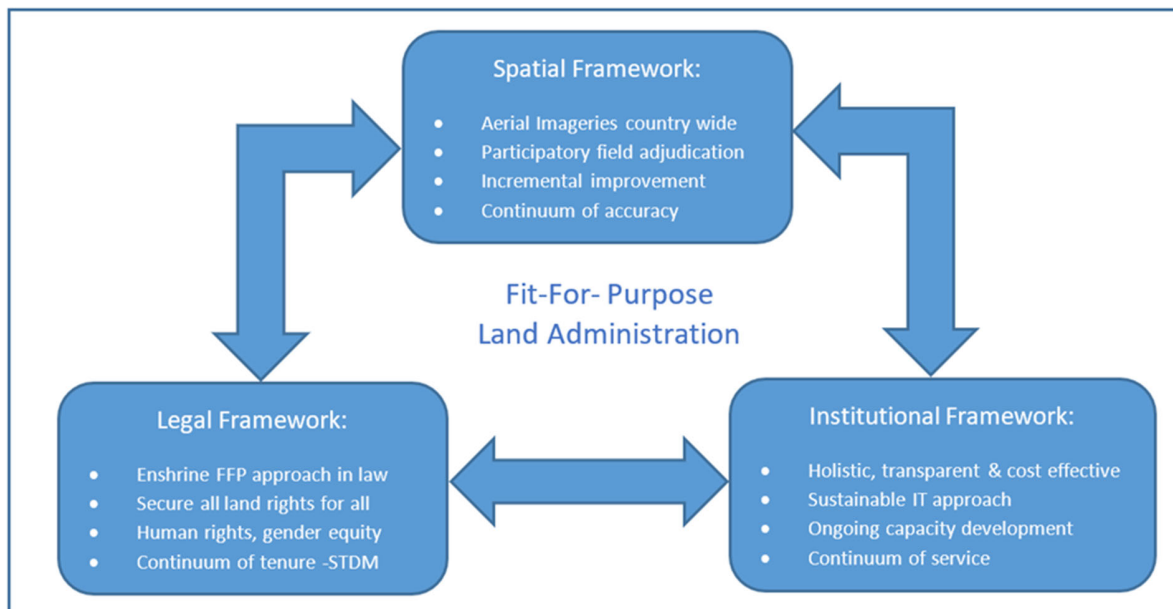
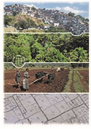


Figure 1 Conceptual framework of fit for purpose land administration (Enemark et al. 2016)



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



The three framework components are interrelated and form a conceptual link underpinned by the necessary means of capacity development. The spatial framework aims to represent the way land is occupied and used. The scale and accuracy of this representation should be sufficient for supporting security of the various kinds of legal rights and tenure through the legal framework as well as for managing these rights and the use of land and natural resources through the institutional framework.

The FFP approach can be the best suitable solution as it helps to address the major issues within a relative short timeframe, low cost solutions with sufficient quality. Under this approach, informal land tenure can be identified, recorded and verified through participation of the concerned stakeholders. With this approach, a detailed inventory of informally occupied land can be prepared which can be helpful for the state to rehabilitate the landless and informal settlers, victims of disasters and internally displaced people.

The FFP strategy is feasible for the least developed or developing countries as it uses low cost solutions. For Nepal, it would be less feasible to carry out standard field survey and provide title for all informally occupied land in 753 local government jurisdictions. , The FFP approach uses aerial or satellite images for data acquisition, free and open source software for data processing, analysis, storage and retrieving, and locally trained human resources and participatory processes for conducting the task. These alternates ensure fast execution of tasks in less cost and with adequate accuracy for the purpose of securing peoples' tenure right on land. Furthermore, the FFP approach enables to cover all regional/local jurisdictions simultaneously. It is considered that FFP approach is one of the best solutions.

4. Rationale of FFPLAS in Nepal

Three representative examples of informal tenure and its consequences are given here to highlight the rationale and importance of FFP LA:

Case 1: Baby child Sonish Awal (**Error! Reference source not found.** left), son of Shyam Awal was successfully rescued from his destroyed house after 22 hours of the massive Earthquake of April 2015. Nepal Government decided to provide immediate relief and house construction grant to the earthquake victims who lost their houses. When Shyam Awal claimed for the relief, the government asked him to produce the land ownership certificate of his land/ destroyed house. Unfortunately, Mr. Awal, who had been living there for more than 5 decades, did not had the land ownership certificate as the land was not registered in the Official Cadaster, and couldn't get compensation. However, it was much later when the government changed the policy, and he could get access to some, relief or compensation.



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019

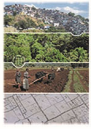


Figure 3. Mr. Sonish Suwal after rescued from earthquake debris (Left). Informal Settlement being demolished by Nepal Government (Right). Photo: kathmandutoday.com (Left), The Critiques (Right)

Case 2: Thapathali, on the bank of Bagmati River in Kathmandu is a well-known informal settlement. More than five hundred families have been living there for decades. The Municipality and other service providers have provided basic infrastructures and utility services such as roads, drinking water, electricity supply and telephone. In 2011, the then Government forcefully evicted the settlers and destroyed the houses (**Error! Reference source not found.**⁴ Right) built on the land without paying any compensation. This action of the government was very much criticized by various human right agencies. The government has later withdrawn from any action but the problem of fear of eviction on informal settlements do still exists.



Figure 4 A school debris due to the 2015 Nepal earthquake (Left). Class room activities in temporary shade (Right) Photo Source: The Kathmandu Post (Left), VSO International (Right)



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



Case 3: More than three thousand public schools' buildings were either destroyed or partially damaged by 2015 Gorkha Earthquake (**Error! Reference source not found.**). The schools' activities are being conducted in temporary houses built with zinc sheets even in adverse environmental conditions. Though Nepal Government has allocated budget for reconstructing of those schools, more than one thousand schools are unable to be built, as the schools do not have formally registered land and landowner certificate in their name. As per the existing law, the building permit cannot be issued if one cannot present a land ownership certificate.

Case 4: Nepal is to develop a fast track highway joining Kathmandu to the southern Terai area of Nepal. The alignment has been fixed. However, when the project started, there were several households already settled and cultivating the land along the proposed alignment. The government needed acquisition of the land for highway construction. The government decided to compensate the landowners who would lose their lands and/or houses because of the proposed highway. Unfortunately, many of the settlers/ landholders did not have the land registered in their name. Therefore, the settlers could not be compensated though the people have been occupying and using the lands for decades, and have built their houses on them. Only later, the Nepal Government formed a high-level taskforce by cabinet decision. The taskforce was tasked to expedite land acquisition process for the project and the taskforce assessed and came out with recommendation of compensation amount to be paid to the owners of unregistered land as well.

There are several such cases of informality, which have been creating severe disturbances on the pace of development and construction of large infrastructures such as hydropower, roads and other development projects.

Going through the representative cases presented above, it can be understood that a Fit-for-Purpose (FFP) land administration system is required in Nepal to record the existing situation of informal land tenure quickly which is affordable and require very fewer human resources and infrastructure. It further necessitates testing such tools in identification, verification and recording (IVR) of spatial and non-spatial data/information on informal land tenure.

5. Objective

Given the numerous ways of land use and their possession, their identification needs a simple, basic and understandable system. The challenges set by the overall global sustainable development agenda requires good land governance, which will only be achieved when an effective land administration system is fully operational. Therefore, novel solutions are required that can deliver security of tenure for all, are affordable and can be quickly developed and incrementally improved over time. The FFP approach to land



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



administration has emerged to meet these challenging requirements. The study aims at developing a strategy for implementing progressive provisions on land tenure and management as outlined in the new Constitution, and which comply with international concepts and best practices.

In this context, the main objective is to develop FFP strategy to design and implement fast, cheap and good enough land administration system along with the following characteristics:

- **Focus on the purpose:** The system should be designed to be the best “fit” for the purpose of providing secure tenure for all and enable control of the use of all land.
- **Flexibility:** The system should be flexible in terms of accuracy demands as per need of the society. It includes flexibility to record and secure the more informal types of land tenure.
- **Incremental improvement:** The system should be designed in such a way that it meets primary needs of the society today, and later can be incrementally upgraded and improved over time when such requirement arises.

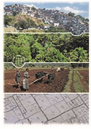
6. Methods, Guiding Principles and Foundation of The Study

This study has been conducted and shaped by adopting the following methods such as desk study of various existing materials and literature, case studies and field investigations, focus group discussions, interactions with key officials and stakeholders, questionnaire survey among the landholders and settlers. Main guiding principles and foundation of this study can be identified as the following:

6.1 Constitution of Nepal

The Constitution of Nepal promulgated in 2015 has the following key points of reference on land rights, security of tenure and land management.

- Every citizen shall have right to proper housing [Article 37(1)]
- No citizen will be evicted from or encroached on the housing, except in accordance with law [Article 37(2)]
- Landless *Dalits* (so called untouchable caste) will be provided with land for one time [Article 40(5)]
- Implementing international treaties and agreements to which Nepal is a State party [Article 51.b.(3)]
- Guaranteeing good governance by ensuring equal and easy access of people to services provided by the State and making public administration clean, competent, impartial, transparent, accountable and participatory. [Article 51.b.(4)]
- Abolishing dual ownership and implementing scientific land reform [Article 51.e(1)]



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



- Discouraging absentee landownership and land consolidation for enhancing productivity [Article 51.e(2)]

6.2 National Land Use Policy 2015

The fundamental principle of National Land Use Policy is to

- Promote complimentary land use
- Maintain competitive land use
- Avoid conflicting land use

These principles are implemented to achieve optimum productivity and benefits from limited land resource. Because of the increasing population, unplanned urbanization, internal displacements and migrations, natural and human induced disasters, pressure on land is immensely increasing and its sustainable management is inevitable. Therefore, the National Land Use Policy is also an important guideline to follow for the study.

6.3 Proposed Land Policy

The Proposed land policy is another key document that is drafted in alignment of the new Constitution. It has six main objectives, which mainly deal with:

- Recognizing all different land tenure types
- Ensuring access of marginalized group of people to land and land-based resources
- Optimum use of land
- Promoting and ensuring uniform and consistent land valuation system, progressive land tax and functional and vibrant land market
- Efficient land development process
- Enhanced land service delivery mechanism

Various innovative and people centric provisions are made in the policy framework which cannot be directly addressed within the existing legal framework.

6.4 Sustainable Development Goals (SDG)

The LAS should allow the implementation of land policies to fulfill political and social objectives and to achieve sustainable development. Good land governance should also be a means of supporting the 17 sustainable development goals (SDGs) which has 169 targets. Good land governance requires these core dimensions of the global agenda to be followed for empowering people through tenure security, food



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



security, access to and sustainable use of land and natural resources, and no land conflicts. In this regard, land administration systems provide an infrastructure for implementing land policies and land management strategies in support of sustainable development. Access to resources including land and security of tenure for Ending Poverty (SDG 1.4), Zero Hunger (SDG 2.3) and Gender Equality (SDG 5a) are required in addition to Safe, Resilient and Sustainable Cities and Human Settlements (SDG 11). Therefore, these SDGs should also be guiding principles for developing this new strategy.

6.5 Voluntary Guidelines on Governance of Tenure (VGGT)

Fundamental principles of VGGT is to:

- Recognize and respect all legitimate tenure rights
- Safeguard legitimate tenure rights
- Promote and facilitate enjoyment of legitimate tenure rights
- Provide access to justice to deal with infringements (violation) of legitimate tenure rights
- Prevent tenure disputes, violent conflicts and corruption

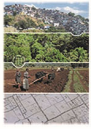
Within the scope of the traditional land administration system, all these principles are short of being fully addressed. However, the newly enacted Constitution of Nepal addresses these principles and the proposed land policy has been drafted in the same line.

6.6 Other International Commitments

Universal Declaration of Human Rights (UDHR), International Covenant on Civil and Political Rights (ICCPR), International Covenant on Social, Economic and Cultural Rights (ICESCR) and other international treaties and covenants related to human rights and rights to the access to property and economic resources were ratified by Nepal. These international commitments and their provisions can also be considered as guiding principle of this study.

7. Piloting of FFP Approach to Land Administration: Case Studies

Pilot mapping of using the FFP approach was conducted at three different sites with three different scenarios: i) mapping of informal settlement, ii) mapping for time and cost comparison of the techniques and iii) mapping of farmland and households in a disaster affected area. The pilot studies presented good examples for use of FFP approach to land administration. Through experiences gained during these pilot studies, and in combination with literature studies, focus group discussions and experts' opinions, a FFP land administration strategy for Nepal is developed. These pilot studies are briefly presented in this section.



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



7.1 Mapping of Informal Settlement: A Case Study in Jhorahat of Morang District

Jhorahat village of Morang District, Province No 1 of Nepal was selected as the study area for piloting of IVR system for mapping of informal settlement¹. The village consists of settlement of landless people, informally settled on these lands for more than two decades. Altogether seventeen families have been residing along the road in the government land. The Municipality and other Government institutions have already provided them electricity, drinking water telephone lines and other services. The community has also been socially accepted. However, the land they have been residing on for decades is not yet registered in the formal cadaster.

Participatory approach was utilized during data collection. Identification, Verification and Recording (IVR) of land tenure rights of the people is carried out in participatory approach. The local people identified their land parcels on printed satellite imagery. The parcel boundaries were demarcated in a participatory process including the owner/user of the land and adjacent parcels, neighboring people and local representatives identifying the borders on a satellite imagery. Their claims were verified in field during the adjudication process. The residents also provided documents such as electric bill payments, drinking water and telephone connection, recommendations of local institutions as the proof that the land is being used by them. Later, the spatial location of each parcel was digitized and recoded in open source customized GIS system, Social Tenure Domain Model (STDM) and the documents are recorded together with socio-economic data collected through the structured questionnaire during the field visit.

The system is found easy to handle information on informal settlements. The data can be entered, stored and retrieved very efficiently. The system is found very suitable to identify the status of settlements by generating different custom reports. All the stakeholders (informal settlers, civil society, NGOs, local institutions and government officials) participating in dissemination workshops were found satisfied with the system and its usability. The tool is intuitive to use and manage. Local people and other stakeholders easily understood the application of Satellite images to identify their location and participate in the IVR process thereby. Further, they recommended the government that the system should be used for solving the problem of tenure security of landless and informal settlements.

7.2 Comparing Time and Cost of Mapping: A Case of Handikhola of Makawanpur District

Part of Handikhola village in Makawanpur District (is now under Manahari Rural Municipality) was another pilot area for FFPLA. A comparative study of various cadastral data acquisition technologies being

¹ <http://gltn.net/2016/11/24/applying-stdm-in-pro-poor-gender-responsive-land-governance-in-nepal/>



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



practiced in Nepal has been carried out. Cadastral map and database were prepared using various techniques. Time and cost incurred in this procedure is recorded. The main purpose of conducting the piloting at the same location was to compare the time and cost incurred by FFP approach with that of traditional approaches.

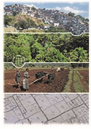
Local people/land owners were requested to identify and delineate their land parcels on the printed satellite imagery with a marker pen. They were also requested to fill a questionnaire. Verification of their claim is done in the field during participatory adjudication process. The field data were recorded. Map and database were developed using the STDM technique under FFP approach.

The study found that the conventional method of filed surveys is far more expensive than the FFP approach. The main reasons for this higher cost are collection of Ground Control Points, standard surveys, higher cost of professional Surveyors as well as the processing of Remote Sensing Satellite images. When FFP approach was carried out, the cost is less due to the involvement of locally trained land officers, use of low cost imagery, participation of people, less time, use of open source based STDM software. It was estimated that the time and cost incurred in FFP approach per parcel was only about 25% of conventional traditionally applied survey method in Nepal.

7.3 FFP Land Tools for Post-Earthquake Land Management, Rehabilitation and Reconstruction²

In the aftermath of the 2015 earthquake, more than 900,000 houses were fully or partially destroyed and some 475 large or small settlements were feared in need of relocation. The Nepal Government promised grant for private house construction and encouraged rehabilitation into integrated settlements. Many of the victims could not access to grants due to lack of land ownership certificates. GLTN/FFP tools such as participatory enumeration, Social Tenure Domain Model, Tenure -responsive Land Use Planning, Gender Evaluation Criteria and Participatory and Inclusive Land Re-Adjustment (PILaR) were applied in four villages of Dolakha district. These tools were modified and customized accordingly to suit the local context. The experience of these interventions were critical in the IVR of informal tenure holders, addressing to the relocation of earthquake victims and villages interested in integrated settlements for a broader land management, It was also useful to inform possible changes in the current policies and regulations. The use of satellite imagery for identification of household occupancy and farmland in a mountainous terrain was conducted for the first time. It was confirmed that the rural properties in terms of the farm terraces, and

² <http://unhabitat.org.np/media-center/news/fit-for-purpose-land-administration-initiative-in-nepal-kicks-off/>



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



location and boundary of farms and parcels through participatory enumeration could be undertaken with ease within a short time.

8. Developing a Strategy for Implementing FFP in Nepal

The process of developing a FFP strategy included extensive desk study and review of appropriate literature, interview with relevant stakeholders such as high-level government officials, land right activists working in the area, civil society organizations, academicians and targeted people. Several workshops and seminars were organized at central and local levels, results from the recent studies on locally existing tenure typology in the country were analyzed, and the application of FFP approach for tenure security in post-earthquake disaster in pilot areas were also taken in consideration. The FFP strategy fully dwells with the three framework components: Spatial, Legal and Institutional (Enemark, McLaren, & Lemmen, 2016).

The FFP LA approach recommends that the activities of recording and registering land rights should be conducted by administrative institutions under delegated authority wherever possible. It will minimize the amount of time involved in recording and registering land rights. The FFP LA is primarily aimed at being implemented as national level programs to deliver security of tenure for all. It is a pro-poor approach that recognizes and legalizes all legitimate rights throughout the country. However, it requires political commitment up front to design and execute such national level programs within a short timeframe and at affordable costs. In cases where this political commitment is not yet in place or where there is large categorizes of ambiguous occupancy rights, the FFP approach may well be implemented incrementally through local pro-poor recordation initiatives, which starts by recognizing and recording legitimate rights as found in the local communities. These local initiatives may gain enough momentum and acknowledgement to eventually trigger wider incremental change, which eventually lead to national recognition with corresponding changes to the legal and regulatory framework. The local pro-poor recordation initiatives can therefore work in parallel and be a supportive component of the national recordation process or act as a driver for change to help a country adopt the FFP LA approach.

As numerous types of land occupancy with ambiguous rights exist in Nepal, it may be considered that recognition and recordation of such informal lands start by local pro-poor recordation initiatives followed by national level programs (**Error! Reference source not found.**). The national approach is shown in the center column starting by recognizing the various kinds of tenure types to be enshrined in the land laws. On this basis, the mapping and recording in the field can be undertaken through a participatory approach and the result can be recorded in the land register. The local approach is shown in the left column. This



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



approach will identify and record the actual legitimate land rights through a participatory approach. These rights can then eventually be considered and recognized at national level and entered into the land register.

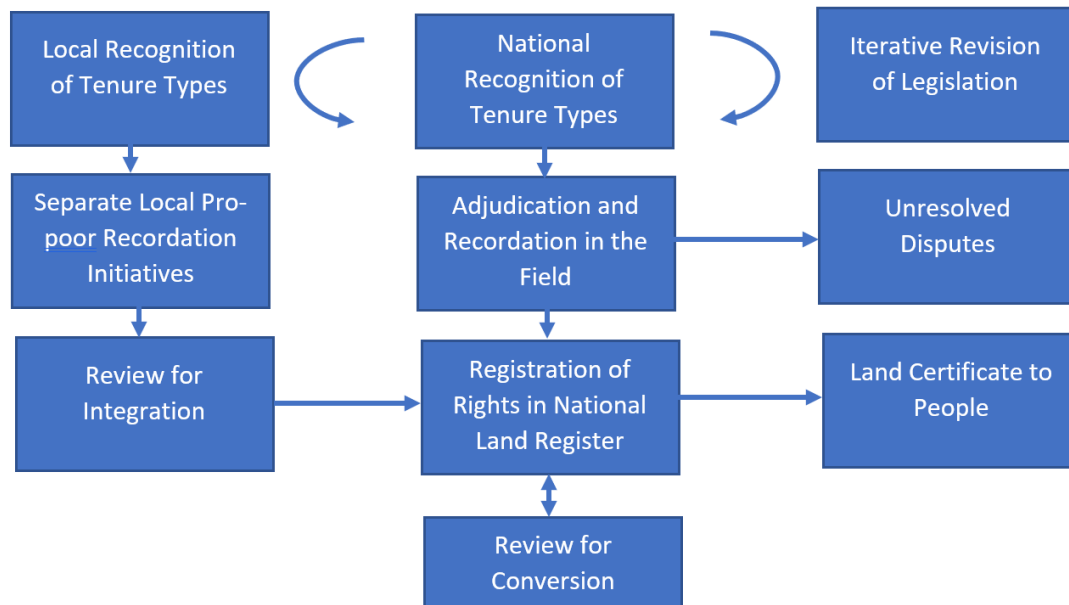


Figure 5 FFP Process for Recognizing, Recording and Reviewing Land Rights (Enemark et al., 2016)

The paper discusses the specific strategies to implement the proposed land policy in Nepal focusing on addressing informal/non-statutory land tenure and its management according to the Fit-For-Purpose concept. The spatial, legal and institutional frameworks to be designed and implemented for proper management of such land tenure are briefly discussed.

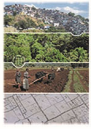
8.1 Spatial Framework

The spatial strategies to be adopted for administering informal land tenure are:

8.1.1 Mapping and Recording Non-Statutory/Informal Land Tenure

To deal with these kinds of non-statutory tenure issues, capacity of the government needs to be increased. To undertake timely, cheaply and adequate survey for areas not yet surveyed, appropriate (Fit-For-Purpose) approaches should be applied to acquire the parcel boundary data, and, at the same time, by using a participatory approach, the various kinds of tenure held by people can be recorded.

Currently, Nepal does not have database on informal/non-statutory land tenure and such settlements in official cadaster. Most of the landless people have occupied government or public land or are living on



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



other legal owners' land as tenants without secured or formal rights. It is very unjust that the existence of such people on such land is not even recorded in the official register.

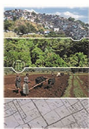
Constitution of Nepal has ensured right to housing for every people. This situation is considered as violation of human right according to the Universal Declaration of Human Right and other conventions. Therefore, serious efforts are needed to recognize informal land tenure. To deal with the informal tenure, VGGT principles should be adopted according to which, the state should do the following (FAO, 2012):

To implement these principles, mapping and recording informal land tenure is the first step. In absence of such recognition of the settlement and land tenure, many complications are seen during rehabilitation and resettlement of earthquake and flood victims. Quick and efficient mapping of such land tenure and settlements can be done by using different techniques. High-resolution satellite images can be one for mapping. Participatory methods should be applied for adjudicating rights of individual/family in the plots. It can be verified by the community involvement as well. Dense settlements can also be mapped and recorded in the same way by using drones. Point cadaster can also be an alternative for fast and efficient record maintenance. Open source software can be used for keeping the data. STDM promoted by GLTN/UN-Habitat can be a solution as was applied in different pilot projects discussed in Section 7 above.

8.1.2 Focus on Security of Tenure for All

The main purpose of land administration systems is to provide security of tenure for all. The other purposes include enabling access to credit and investments, facilitating valuation and taxation, planning and control of the use of land and natural resources, supporting land development, and providing land parcel and land owners information to support decision making on land administration. The systems should identify and delineate the occupancy as well as the use of the individual land parcels. It should be established according to the purpose. Security of land tenure only requires satisfactory identification of the land parcels and buildings on satellite/aerial images or on a map. It does not need accurate boundary surveys using sophisticated equipment and highly skilled human resources that are both costly and time consuming.

Accuracy of parcel boundaries should be seen as a relative issue and can always be upgraded over time. Accuracy requirement is obviously lower for low value lands in rural areas than in densely built up and high value urban regions, where accurate field surveys may sometimes be justified. This principle is also being practiced by Nepal Government by producing different scales of cadastral (1:500 for municipalities to 1:2500 for rural areas) and different scale topographic maps (1:25000 and 1:50000) for different types of terrain. The registration of legal and social tenure rights requires identification of physical land parcels and objects. The identification through visible boundaries as seen in the aerial/satellite imagery will be



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



adequate for securing and recording the connected legal and social land rights. Non-visible boundaries can be captured by supplementary measurement using (handheld) GPS or conventional field surveys, for example. If occupants want the exact boundary delineation for some specific purpose, it can be measured and registered at their own costs.

Official inventory of state land is still not realized completely in Nepal. Therefore, mapping of government and public land and creating an inventory of such land is necessary. To deal with this, rights, restriction and responsibility (RRR) over the land and land-based resources should also be well defined. Community user groups can be created and Standard Operating Procedure (SOP) of use of such land can be developed in the leadership of local institutions. Various state of the art but cheap and efficient techniques can be used for creating such inventory. Along with high-resolution satellite imagery, drone imagery and orthophoto (in case of high value land in urban areas) can also be used as per specific need and availability.

8.2 Legal Framework

The existing legal framework in Nepal does not completely address several provisions made in the new constitution and as drafted for a new national land policy. Therefore, an appropriate legal framework should be designed for addressing the newly enacted constitutional provisions and the relevant policy issues at federal, provincial and local levels.

8.2.1 A New Land Administration and Management Act

A new unified Land Administration and Management Act (LAMA) should be drafted and enacted based on the several existing acts, to improve efficiencies, streamline overlapping provisions and address gaps.

New legal provisions should be made to recognize informal tenure and safeguard the rights of informally settled people. The Continuum of Tenure approach (Du Plessis et al, 2016) can be adopted for recognizing informal tenure rights of these people. In this approach, any types of relations of these people to land are recognized and recorded, as it exists on the ground.

Using the STDM approach, Identification, Verification and Recording (IVR) of the people's association and relation to land can be recorded.

New legal systems and regulatory should be designed in such a way that it can adopt Fit-For-Purpose approach to deliver cheap and fast services with 'good-enough' spatial accuracy and ensure 'Good' land governance.

8.2.2 Alternative Dispute Resolution (ADR) Mechanism and Provision of Land Tribunal



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



Majority (47%) of the disputes registered in different courts are related to land (Chhatkuli, 2013). The court procedures are lengthy, time consuming and costly. Most of these disputes can be litigated with the involvement of community and/or appropriate mediation methods outside of the court, which can be cheaper, faster and even address the issue with mutual understanding and trust to end it up with a win-win situation. Therefore, the new legislation should have provisions of Alternative Dispute Resolution (ADR) mechanism such as community involvement and third-party mediation in local level. The recent provision of a Judicial Committee under the chairmanship of Deputy Mayor/Vice Chairperson as established at the local government levels has been developed as a good move in this regard.

Land disputes have several dimensions and need specific skills, technology and human resources. Therefore, the new legislation should also have provision of constituting Land Tribunals to deal with complicated land disputes, which cannot be resolved by the local efforts through ADR mechanism. This can facilitate the court process to achieve quality justice in less time and at lower cost.

8.2.3 Land Banking

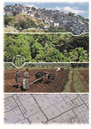
Landowners who have been involved in the profession other than agriculture can contact the bank for sale, mortgaging, leasing and financing. The small holders, landless, squatters, peasants etc. can be allocated the land stocked at the bank for their livelihood, employment, economic strengthening and entrepreneurship development. In this way, on one hand, the land would not remain uncultivated and production will be increased to support food security and economic growth; on the other hand, livelihood of the socioeconomically disadvantaged group of people is sustained because of their access to land.

8.2.4 Management of State Land

Surveying, mapping, record management and security of all state land should be clearly defined in the new legal framework. Various overlapping and contradictory provisions exist in the current legal system. Various laws allocate the responsibility of state land protection and management to different institutions. It creates confusion and dispute over the jurisdiction and consequently the protection and management of state land cannot be done efficiently and effectively. Hence, a new clear and unambiguous jurisdiction should be defined, and roles and responsibilities should be allocated to appropriate institution, which can protect, use and manage all state land optimally.

8.3 Institutional Framework

For the implementation of the provisions proposed in Land Policy, it is vital to develop and strengthen institutional framework in three levels of government. Several informal discussions have been conducted



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



with various experts, professionals and stakeholders. The main strategies suggested for creating institutional framework for implementing FFPLA are categorized under three broad topics: Federal and provincial land authority, Local land authority; and other institutional issues.

8.3.1 Federal and Provincial Land Authority

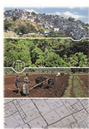
Strengthening/restructuring of key national land agencies such as Survey Department, and Department of Land Management and Management is needed to develop a consolidated and unified land authority at federal level.

Provincial level land agency should be established which should be responsible to deal with the state level functions as described in the constitution. This structure will be new as there are no such institutions present currently in this level.

8.3.2 Local Land Authority

Local level institution at municipal levels on land management should be established to deal with the local level functions. This structure will be new as there are no such institutions present currently in this level. However, the district level offices can be merged and restructured to some extent in order to address the local needs. The local land authority will be responsible for addressing the following land administration issues:

- Surveying and mapping: The local land authority may consist of a surveying and mapping unit which would be responsible for preparing and updating cadastral maps and databases
- Land ownership management and registry: Land tenure and ownership management unit is also needed within the local land authority, which would be responsible for land ownership transfers, registration of deeds regarding land transactions, buy and sale, inheritance, land records maintenance and updating etc.
- Alternative dispute resolution (ADR) mechanism: Local land authority should consist of some Alternative Dispute Resolution (ADR) mechanism for land dispute resolution.
- Land tribunal: Land Tribunal is another institutional mechanism that can be developed for efficient and effective land dispute resolution.
- Community user's groups: Best and optimum use of land and land-based resources can be ensured by involvement of community in land management process. Nepal has a very good experience of community forest management, which is considered as one of the best examples in the world. Similar approach can be adopted in the protection and conservation of government and public land,



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



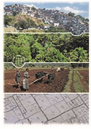
and the local land use and land management at community level. Various under-utilized and abandoned barren lands can be highly productive and income generating resources if they would be handed over to community. Therefore, community user's groups can be formed, and certain types of land can be handed over to the group for its proper use and management.

- Land valuation: Land valuation unit is needed in the local government. Policy, acts, standards can be formulated in collaboration with the federal and provincial agencies and can be implemented by the provincial institutions in association with the local government.
- Land use planning: A specific land use planning and technically facilitating agency may also be needed at the local level. However, the policy and act formulation, decision on technical standards can be done at federal and provincial level. This unit will be responsible for formulation and implementation of local land use planning.
- Land banking: Land bank, land stock market in local level should be established. However, the policy, acts, standards should be formulated at the federal and provincial levels.

8.3.3 Other Institutional Issues

On top of institutional setup at federal, provincial and local levels, the following additional set ups are recommended:

- Professional organizations and associations: Professional organizations and associations may play important roles for continuous professional development. Land administration and management sector in Nepal can also benefit from making appropriate institutional mechanisms to accommodate different professional organizations and collaborating with them for good reasons.
- Survey licensing board: Survey licensing board is needed at the federal and provincial levels to decide on the qualification and skill needed for surveyors. This board may be responsible for awarding appropriate license for private surveyors.
- Private surveyors: Private surveying companies/individuals can be provided license to carryout surveying and mapping functions. In the current tradition of governance, roles and duties of the government are squeezing and are limited to the regulating, coordinating and facilitating tasks.
- Human resources: Nepal is producing roughly 120 Geomatics Engineers/Senior Surveyors, 150 Surveyors and 200 Assistant Surveyors annually. This human resource is insufficient to address the need of the professionals adequately. Each local government unit will be looking for such human resources in near future to run their land administration functions. To fulfill this need, some short-term packages including basic surveying, measurement and mapping skills, basic GIS, GPS and



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



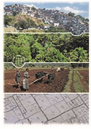
image interpretation techniques and basic social and legal know-how of land administration can be developed and training courses can be conducted. These human resources, after getting appropriate license, may be involved in various surveying and mapping jobs as per requirements.

- Infrastructure and ICT: Physical infrastructures are necessary for sustainable capacity development. Current institutions need basic IT facilities for delivering their services effectively and efficiently. Land administration services also needs modernizing. Application of ICT for transparency and win the trust of the people, and availability of appropriate infrastructures are most essential for this purpose.
- Tools and techniques: Appropriate institutional capacity is needed to handle the various tools and techniques of land administration and management in different levels. Appropriate institutional capacity can be required to accommodate, modify and customize the systems, making templates, developing uniform and consistent guidelines, standard operating procedures and working manual. A technical team and coordination mechanism would be very important for ensuring effective implementation and achieving consistent results throughout the local government within/among the provinces.

9. Conclusion

Nepalese land administration system is not yet complete and up-to-date. Official cadaster does not have coverage of whole country. Informal land tenure is not yet recognized and recorded in the official cadaster. The Fit-For-Purpose approach can be a potential solution to incorporate and apply in Nepalese LAS. This concept on the one hand can be successfully adopted to address the current issues and limitations in informal land tenure system; on the other hand, this can be good enough, cheap and fast in comparison to the existing technology and methods of LAS.

Various issues and limitations are identified to improve the spatial, legal and institutional aspects of LAS. Nepal has recently enacted the new constitution. It has made many remarkable and progressive provisions to make land administration system more equitable, inclusive, and pro-poor and gender responsive. New land policy is under discussion and expected to be endorsed by the Government soon. The policy has made several new provisions, which may not be easily implemented with the existing LAS and traditional ways. In this context, new Fit-For-Purpose land administration strategy is recommended as a suitable alternative for implementing these provisions. This strategy will be helpful to achieve the goals targeted by the Constitution of Nepal.



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



FFP Land Administration approach is characterized with three key components: Spatial, Legal and Institutional frameworks. **The spatial framework** is related to mapping and recordation of land parcels and the connected land rights. **The legal framework** is related to registration and security of rights in land. **The institutional framework** is related with the mechanism of service delivery through certain institutional setup. In combination, these three FFP components, this approach is expected to deliver cheap, fast and good enough services in the land administration sector of Nepal. The Fit-For-Purpose Land Administration Country Implementation Strategy (MoALMC, 2018) has been well taken by the Government and different Municipalities in Nepal and currently at least three municipalities are working on developing STDM based information system of informal tenure.

10. References

- Chhatkuli, Raja Ram. (2013). National Land Expert Report, UNDP/CPP (Unpublished)
- Du Plessis, J. ; Augustinus, C. ; Barry, M. ; Lemmen, C. ; Royson, L. (2016). The continuum of land rights approach to tenure security : consolidating advances in theory and practice. In *Scaling up responsible land governance, proceedings of the annual World Bank conference on land and poverty, 14-18 March 2016, Washington DC, United States. Washington, D.C., 2016* (p. 48).
- Enemark, S., McLaren, R., & Lemmen, C. (2016). *FIT-FOR-PURPOSE LAND ADMINISTRATION Guiding Principles for Country Implementation*. Nairobi, Kenya.
<https://doi.org/https://www.fig.net/resources/publications/figpub/pub60/Figpub60.pdf>
- FAO. (2012). *Voluntary guidelines on the responsible governance of tenure of land fisheries and forests in the context of national food security*. FAO. Rome. Retrieved from
<http://www.fao.org/docrep/016/i2801e/i2801e.pdf>
- IRIN. (2010). Food Land tenure reforms “urgently needed.” Retrieved February 9, 2019, from
<http://www.irinnews.org/report/91313/nepal-land-tenure-reforms-urgently-needed>
- Joshi, J. R., Chhatkuli, R. R., Panday, U. S., Rimal, B., Tuitui, D., & Dev, H. P. (2017). Development of Pro-poor and Gender Responsive System (ProGResS) of Land Governance in Nepal. In *2017 WORLD BANK CONFERENCE ON LAND AND POVERTY* (p. 17). Washington DC.
- Ministry of Agriculture, Land management and Cooperatives (MoALMC), Community Self Reliance Centre (CSRC), UN-Habitat, and Global Land Tool Network (GLTN). (2018). *Fit-For-Purpose Land Administration: A Country Level Implementation Strategy for Nepal*. Kathmandu



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



Regmi, M. C. (1977). *Land Tenure and Taxation in Nepal*. Ratna Pustak Bhandar.

United Nations Nepal Information Platform. (2017). RURAL LANDLESS and LAND POOR. Retrieved August 24, 2017, from <http://un.org.np/oneun/undaf/landless>